AMENDMENTS TO THE DRAWINGS:

Figure 1, 2, 6, 13, 14, 16, and 18 have been amended to make them more clear.

No new matter has been added.

Attachment: 7 replacement sheets

REMARKS

Claims 1-5, 8-12, 16-43, 46-57 and 62-69 are pending. Claims 6, 7, 13-16 and 44-45 have been canceled without prejudice. Applicants expressly reserve the right to pursue the canceled subject matter in this application or subsequent applications that claim the benefit of this application. Claims 1-3, 5, 8-10-12, 24, 26, 28-29, 31-33, 37-38, 47, 62, and 65-68 have been amended to recite "endothelial progenitor cells". Support for the amendment may be found, inter alia, in originally filed claim 16 and on page 10, lines 15-17 of the specification. This amendment does not enter any new matter.

Applicants wish to bring to the Examiner's attention that the restriction requirement mailed August 11, 2006 indicates that "Applicants are entitled to consideration of additional species which depend from or otherwise require all the limitations of an allowable generic claim". Applicants believe that the amendments and arguments presented herein place this case in condition for allowance and early notification is respectfully solicited.

Applicants request reconsideration in view of the following remarks. Issues raised by the Examiner will be addressed below in the order they appear in the prior Office Action.

DETAILED ACTION

Specification

The Examiner objects to the specification because of alleged informalities. The abbreviation "EGC" is misspelled "ECG" at lines 26 and 27 of page 14. Applicants have amended the specification to reflect the proper spelling.

The Examiner objects to the abstract as allegedly not being of sufficient length and detail to describe the invention and being replete with legal language and not being on a separate page. Applicants have amended the abstract and ask that the abstract be placed on a separate page. Reconsideration and withdrawal of these grounds of objection are requested.

Drawings

Figures 1, 2, 6, 13, 14, 16 and 18 are objected to because the photographs are allegedly dark and unintelligible. Replacement drawings are attached.

Rejections under 35 U.S.C. § 112, 1st Paragraph

Claims 1-4, 8, 10-14, 16, 19-21, 23-36, 40-43, 45-47, 49-57, and 62-69 are rejected under 35 U.S.C. 112, first paragraph, as allegedly being enabling for a method comprising enriching CD133+ or CD133+/CD34+ EPCs from bone marrow mononuclear cells, does not reasonably provide enablement for a method comprising enriching all other types of endothelial generating cells from bone marrow mononuclear cells and while being enabling for a method of treating ischemic tissue comprising administering CD133+ or CD133+/CD34+ EPCs but not for a method of treating ischemic tissue comprising administering any other EGC.

Applicants contend that the claims, prior to amendment, were fully compliant with the enablement requirement. Nevertheless, to expedite prosecution, Applicants have amended claims 1-3, 8, 10-14, 24, 26, 28-29, 31-33, 47, 62, and 65-68 to recite CD133+/CD34+ endothelial progenitor cells. Support for the amendments is found in originally filed claim 16 and on page 10, lines 15-17 of the specification. Claims 54, 57 and dependent claims do not recite EGC. It is unclear to Applicants why they were included in the rejection. Claim 16 has been cancelled. Reconsideration and withdrawal of this ground of rejection are respectfully requested.

Rejections under 35 U.S.C. § 112, 2nd Paragraph, Clarity

Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for allegedly failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention.

The Examiner alleges that claim 8 is unclear due to the recitation of "culture conditions that promote the formation of endothelial cells." Applicants contend that the claim, prior to amendment, was fully compliant with the clarity requirement. Nevertheless, to expedite prosecution, Applicants

have amended claim 8 to recite endothelial progenitor cells. Reconsideration and withdrawal of this ground of rejection are respectfully requested.

Rejections under 35 U.S.C. § 103(a) - Strauer

Claims 1-4, 8, 10-14, 16, 17, 19-21, 23-36, 40-43, 45-47, 49-57, and 62-69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Strauer et al. taken in view of Ueno et al. (US Patent Application Publication 2002/0037278), Kocher et al. (2001, Nature Medicine 7: 430-436), and Itescu (US Patent Application Publication 2003/0199464).

Applicants traverse this ground of rejection in light of the amended claims. Strauer et al. state that there are multiple fractions of the mononuclear BMCs and "thus, several different fractions of mononuclear BMCs may contribute to the regeneration of necrotic myocardium and vessels", (emphasis added) such as bone marrow hemangioblasts, bone marrow hematopoietic stem cells, mesodermal progenitor cells, and endothelial progenitors (page 1916, column 2, last paragraph – 1917, first column, first paragraph). As it was not clear which of the above cited populations were contributing to the regeneration of necrotic myocardium and vessels, one of skill in the art would not have been motivated to purify CD133+/CD34+ cells and MSCs based on the teachings of Strauer et al.

Applicants respectfully disagree with the Examiner's interpretation of Kocher et al. Kocher et al. only teach that a subset of CD34+ cells express AC133 and do not disclose the percentage. The instant application teaches that expression of CD34 is temporal and can be influenced. Figures 3 and 8 of the instant application show that CD133+ cells may or may not express CD34 and that this is effected by culture conditions. This shows that there are clearly cells that are CD133+, CD34+ or CD133+/CD34+. Kocher et al. do not purify CD133+/CD34+ cells. The suggestion by Kocher et al. that their disclosed therapy taught may be combined with other currently used therapies does not motivate one of ordinary skill in the art to purify CD133+/CD34+ cells.

Applicants respectfully disagree with the Examiner's interpretation of Itescu. Itescu only teaches that EPCs may express CD34 or AC133 (paragraph 61). As described above, applicants

have shown that there are CD133+, CD34+ and CD133+/CD34+ cells. Itescu does not purify CD133+/CD34+ cells.

As recited in the previous section, Strauer et al. fail to teach the purification of EPCs and MSCs. The combination of Strauer et al. with Ueno et al, Kocher et al., and Itescu fails to correct this deficiency. Since the combination fails to teach and/or motivate one of skill in the art to combine all of their elements, claims 1, 54 and 57, and their dependent claims are not rendered obvious by the references.

CONCLUSIONS

In view of the above amendment, Applicants believe the pending application is in condition for allowance.

Applicants believe no additional fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 18-1945, under Order No. CWRU-P01-046 from which the undersigned is authorized to draw.

Dated: October 31, 2007

Respectfully submitted,

By _____

Anita Varma, Esq.
Registration No.: 43,221
ROPES & GRAY LLP
One International Place
Boston, Massachusetts 02110
(617) 951-7000
(617) 951-7050 (Fax)
Attorneys/Agents For Applicant